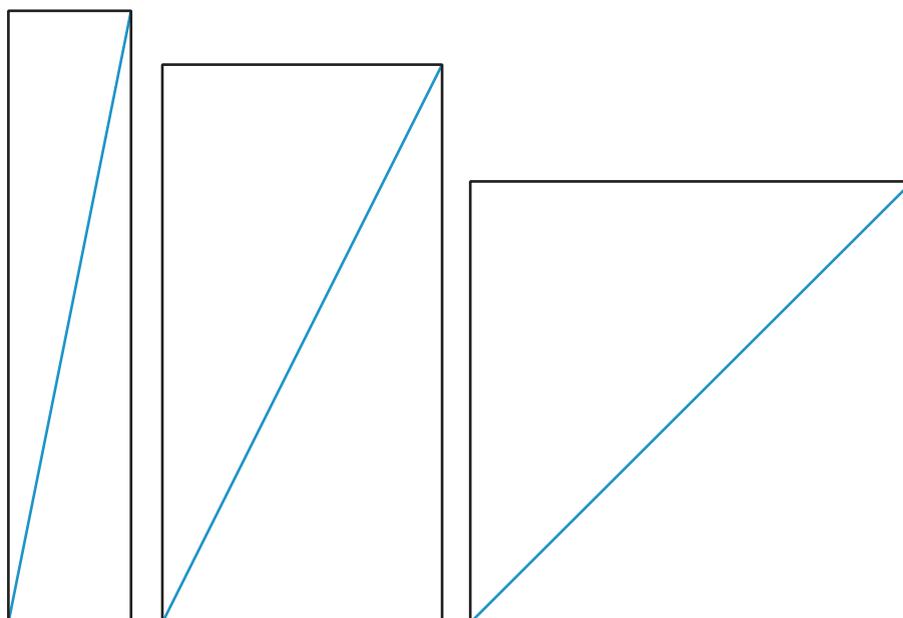


## Lesson 16: When Is the Same Size Not the Same Size?

- Let's figure out how aspect ratio affects screen area.

### 16.1: Three Figures

How are these shapes the same? How are they different?



## 16.2: A 4 : 3 Rectangle

A typical aspect ratio for photos is 4 : 3. Here's a rectangle with a 4 : 3 aspect ratio.



1. What does it mean that the aspect ratio is 4 : 3? Mark up the diagram to show what that means.
2. If the shorter side of the rectangle measures 15 inches:
  - a. What is the length of the longer side?
  
  
  
  
  
  
  
  
  
  
  - b. What is the length of the rectangle's diagonal?
3. If the diagonal of the 4 : 3 rectangle measures 10 inches, how long are its sides?
4. If the diagonal of the 4 : 3 rectangle measures 6 inches, how long are its sides?

### 16.3: The Screen Is the Same Size . . . Or Is It?

Before 2017, a smart phone manufacturer's phones had a diagonal length of 5.8 inches and an aspect ratio of 16 : 9. In 2017, they released a new phone that also had a 5.8-inch diagonal length, but an aspect ratio of 18.5 : 9. Some customers complained that the new phones had a smaller screen. Were they correct? If so, how much smaller was the new screen compared to the old screen?